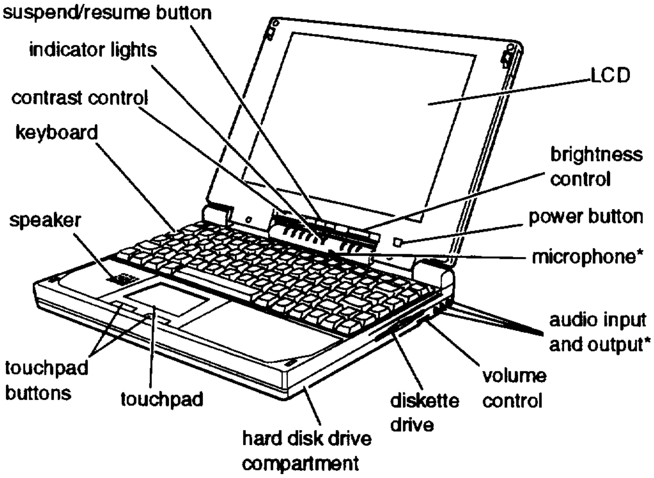
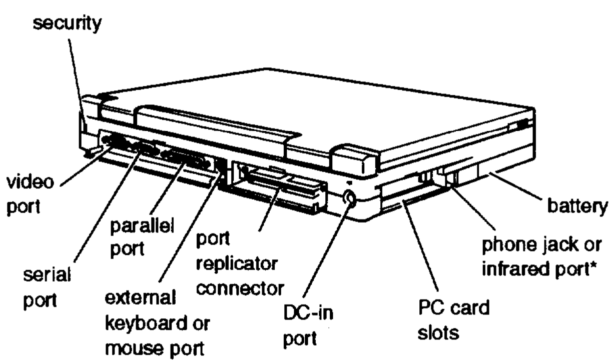
Front View



- These parts function only with the optional audio card installed.

Rear Panel and Left Side



- Available only with the optional internal fax/modem or infrared device installed.

Notebook Specifications

CPU and Memory

CPU	486 DX4/ 100 microprocessor installed in a PGA socket; includes 8KB of internal cache in write-back mode and integrated math coprocessor
System speed	Fast speed and slow speed (8 MHz) available; speed selection through Setup
Memory	8MB standard, configured with 4 or 8MB RAM soldered on the system board; systems with 4MB on system board, include an additional 4MB memory module; expandable up to 24MB using a 4, 8, or 16MB memory expansion module (can install a 20MB module on systems with 4MB on the system board)
ROM	128KB Flash ROM device containing the system and video BIOS and Setup program code
Video RAM	512KB DRAM supports resolutions up to 640 X 480 in 256 colors on the color LCD and up to 1024 X 768 in 16 colors or 800 X 600 in 256 colors on external monitor
Cache	8KB internal
Clock/ calendar	Real-time clock, calendar, and CMOS RAM; backed up by internal battery

Controllers

Video	Chips and Technology® 65535 video controller; 32-bit local bus interface to the microprocessor; supports enhanced video modes on an external monitor; supports resolutions from 640 x 480 in 256 colors on the color LCD and up to 1024 x 768 in 16 colors on an external monitor; automatic external monitor detection; simultaneous display with LCD screen using Fn F10 command or software
Diskette drive	Built-in super I/O controller for one internal 3.5-inch diskette drive; supports 720KB and 1.44MB formats
Hard disk	Built-in super I/O controller has interface to one 2.5-inch, IDE internal hard disk drive; automatically recognizes and configures drives up to 19 mm high that support the IDE interface
PCMCIA	Built-in Vadem® VG-468 controller for two stacked slots; supports two Type I or II cards, or one Type III; PCMCIA version 2.01 and JEIDA 4.1 compatible; supports low power and suspend modes; supports hot insertion (including ExCA standards); register compatible with Intel® 82365SL,

Interfaces

External VGA — Auto-sensing, 15-pin, D-sub, female connector for analog monitor; supports simultaneous display with LCD using Fn F10 hot-key sequence or software command

Parallel — Centronics® compatible; 25-pin, D-sub, female connector; bidirectional S-bit parallel; autodetects ECP or EPP devices when connected and turned on at system start-up

Serial — RS-232C, programmable, asynchronous, 9-pin, D-sub male connector, UART 16C550C

External keyboard / mouse — Auto-sensing, 6-pin, mini-DIN connector for a PS/2-type external keyboard, keypad, or pointing device

Phone jack or infrared option — Supports RJ-11 connector with optional internal fax/modem installed or IrDA-compliant interface card; up to 115.2 kbits/second to a distance of 3.3 feet (1 meter) within a 30° viewing angle; can use COM1(3F8h) or COM2 (2F8h)

Speaker — Internal; automatically disabled when optional audio card is installed and line-out is used

Audio input and output — Connectors for external microphone, line-in, and line-out when optional audio card is installed

Port replicator — Connector for optional ActionPort™ Replicator

Security — Connector for optional Kensington® security device

Keyboard — 85 keys; 101-key keyboard compatible; embedded numeric keypad; Fn key for hot key commands

ActionPoint — Built-in touchpad pointing device with two buttons compatible with standard PS/2 mouse driver software; can be disabled with Setup

Volume Control — Knob adjusts sound of internal speaker or audio card (if installed)

Mass Storage

Hard disk drive — One removable internal IDE hard disk drive, 2.5-inch form factor; maximum height 19 mm; Setup automatically recognizes and configures drives that support the IDE interface; parameters for the supported drives are as follows:

Parameters	MK1924 FCV	MK1926 FVC	MK2720 FC
Heads	16	16	16
Cyl	1053	1579	2633
Sect	63	63	63
WP Com	0	0	0
LZ	1053	1579	2633
Capacity (millions of bytes)	543	815	1350

Diskette drive — Internal 3.5-inch diskette drive; 720KB or 1.44MB format; supports lower power consumption

Setup Program

Stored in ROM; accessible by pressing F8 at system startup; includes power management utilities

Software

One time choice of MS-DOS® and Microsoft Windows® or Windows® 95; also pre-installed Lotus® Smart Suite,® NetCom™ NetCruiser™ trial versions of CompuServe®, PRODIGY,® America Online,® and OAG® FlightDisk;® SystemSoft® drivers and utilities for PC cards, drivers and utilities for video system and touchpad; online version of User's Guide; all installed on the hard disk drive; refer to *About Your Software* card for details on EPSON's support policy

LCD Screen

Screen type (all backlit)	Monochrome	Passive color	Active color
Resolutions and colors	640 x 480, 64 gray shades	640 x 480, 256 colors	640 x 480, 256 colors
Diagonal measurement, active area	9.5 inches	10.4 inches	10.4 inches

Fax/modem Specifications

Characteristic	Fax	Modem
Compatibility	Group 3, CCITT G3 V.2.1, V.27ter. V.29 (send only)	Bell 103, 212A, CCITT V.22. V.22 bis
speeds	14.4, 9600, 7200, 4800, 2400, 300 baud	14.4, 9600, 2400, **1200, 300 baud**
Command set	Class 1	Enhanced AT
Data correction	MNP 2 to 4, V.42	
Data compression	MNP 5, V.42 bis	
Dialing type	Touchtone or pulse	

LED Panel

con	Name	Meanlng
	**Power**	**Green-Computer is on** Flashing green-very low battery; system is about to power down
	Suspend	Green-Standby mode; press any key to return to full power Flashing green-Suspend mode; press Suspend/Resume button to return to full power
	Charge	**Orange-battery is charging normally** **Green-battery is fully charged** Flashing orange-battery is not installed correctly or is damaged
	Diskette drive	Computer is accessing the diskette drive
	**Hard** disk drive	**Computer** is **accessing the hard disk** drive
	PCMCIA	PC card is inserted
1	Num Lock	Num Lock is on, which activates the embedded numeric keypad
A	Caps Lock	Caps Lock is on
	Scroll Lock	Scroll Lock is on

Power Sources

AC power adapters

Specification	Lightweight AC power adapter (A882051)	International AC power adapter (A882101)
AC connection	2 folding connectors	6 ft (1.8 meters) cable
DC cable	6 ft (1.8 meters)	6 ft (1.8 meters)
Input voltage	100 VAC to 240 VAC	100 VAC to 240 VAC
Input frequency	50/60 Hz	50/60 Hz
Output voltage	19 VDC, 1.23 Amp maximum	19 VDC, 1.5 Amp maximum
Size		
Length	3.4" (86 mm)	4.7" (120 mm)
Width	2.2" (56 mm)	2.4" (60 mm)
Height	1.1" (28 mm)	1.5" (38 mm)
Weight	7.8 oz (220 g)	9 oz (255 g)

Battery — Rechargeable 12 Volt NiMH battery; current regulation by thermistor

Caution
Use only the adapters and replacement batteries designed for use with the ActionNote 890 series (lightweight AC adapter A882051, international AC adapter A882101, auto adapter A882241, and battery A882291).

Environmental Requirements

Condition	Operating	Non-operating
Temperature	42° to 95° F (5° to 35° C)	–4° to 140° F (–20° to 60° C)
Humidity (non-condensing)	30% to 90%	5% to 95%
Altitude	–200 to 12,000 ft (–67 to 4,000 m)	–200 to 30,000 ft (–67 to 9,000 m)
Acoustical noise	35 dB at 1 meter (maximum)	

Caution
When traveling by airplane, take the computer into the passenger compartment to prevent it from being stored in an unpressurized storage compartment.

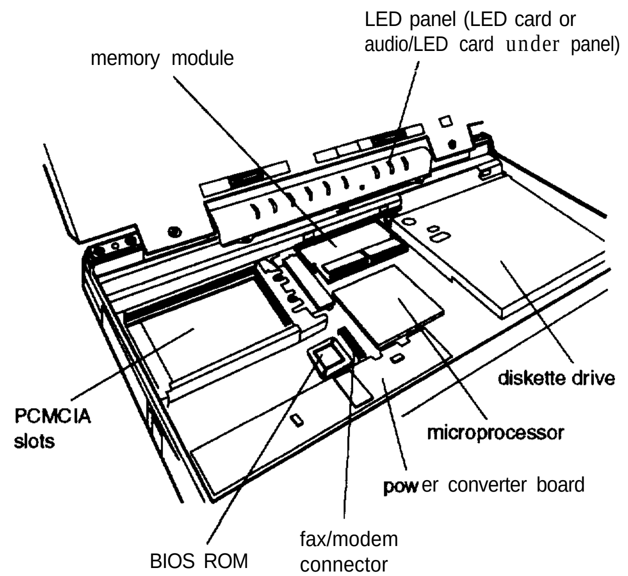
Physical Dimensions

Model	Depth		Width		Height		Weight	
	in.	mm	in.	mm	in.	mm	lb	kg
Monochrome	8.8	220	11.7	297	1.6	40	5.5	2.5
Color	8.8	220	11.7	297	1.7	43	6	2.7

Optional Equipment

- 4MB, 8MB, or 16MB memory expansion module
- User-removable 540MB, 810MB, or 1.2GB hard disk drive
- 14.4Kbps baud internal data fax/modem
- 115.2 kbits/second IrDA-compliant infrared device
- 16-bit, SoundBlaste®l6-compatible stereo audio card
- Additional NiMH batteries
- Extra AC adapter or international AC adapter
- Adapter for an automobile cigarette lighter
- External battery charger
- External keyboard
- Numeric keypad
- PCMCIA Type I, II, and III cards including flash RAM, SRAM, modem, fax/modem, and LAN cards
- ActionPort Replicator
- Portable CD-ROM player
- Carrying case
- Kensington MicroSaver® Security Lock.

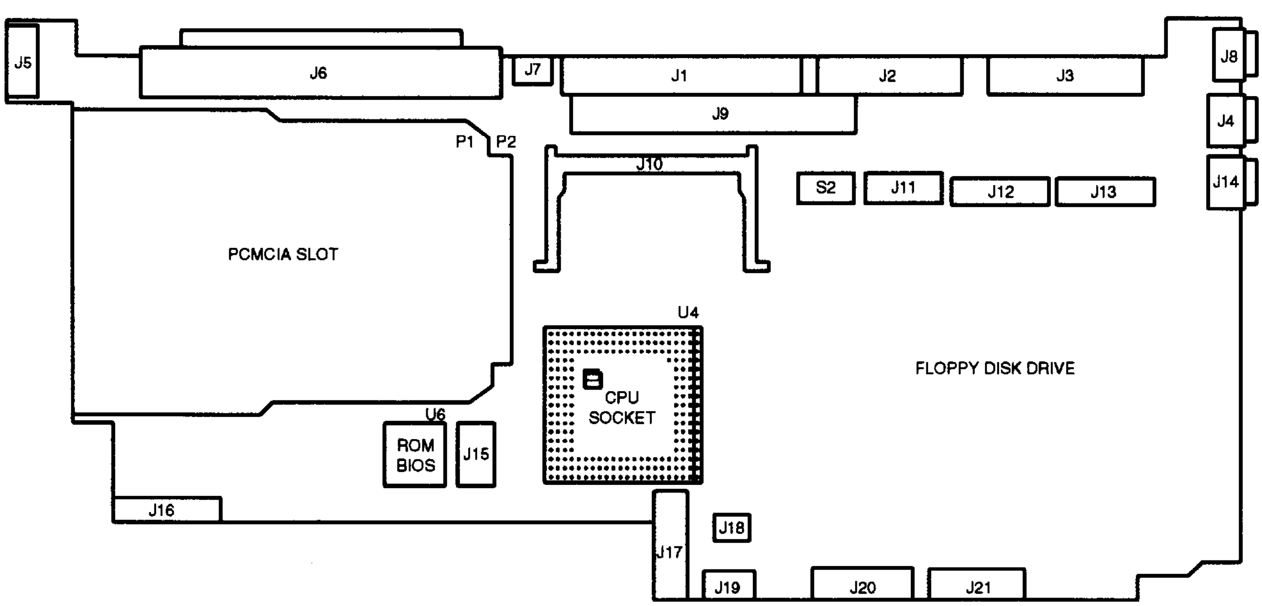
Major Subassemblies



Memory Module Installation

The computer comes with 8MB memory standard, but may have 4 or 8MB of memory soldered on the system board. It includes a single memory module socket which contains a 4MB module on units with 4MB soldered on the system board. You can increase the memory up to 24MB by removing the original module, if one is installed, and installing a 4, 8, or 16 memory module. (You can install a 20MB module on units that have only 4MB soldered on the system board.)

System Board Components



System board components

U4	Microprocessor
U6	ROM BIOS
J1	Parallel port connector
J2	Serial port connector
J3	VGA connector for external monitor
J4	Audio-In connector
J5	AC adapter connector
J6	Port replicator connector
J7	External keyboard/mouse connector
J8	Microphone connector
J9	LED and audio card connector
J10	Memory module connector
J11, J12, J13	LCD connectors
J14	Audio-Out connector
J15	Fax/modem connector
J16, J17	Main board connectors to power converter
J18	Speaker connector
J19	Touchpad connector
J20, J21	Internal keyboard connectors
J22	Diskette drive connector
J23	Hard disk drive connector
JP1, JP2	Daughterboard connectors
P1, P2	PCMCIA connectors
S1	Processor switch
S2	Speed selection switch
S4	CPU selection switch

Connector Pin Assignments

Parallel port connector (J1)

Pin No.	Signal Name	Pin No.	Signal Name
1	NC	14	AUTO FEED XT
2	D0	15	ERROR
3	D1	16	INIT
4	D2	17	SLCT IN
5	D3	18	GND
6	D4	19	GND
7	D5	20	GND
8	D6	21	GND
9	D7	22	GND
10	ACK	23	GND
11	BUSY	24	GND
12	PE	25	PRT SEL
13	SLCT		

Serial port connector (J2)

Pin	Signal	Pin	Signal	Pin	Signal
1	Carrier Detect	4	Data Terminal Ready	7	Request to Send
2	Receive Data	5	Signal Ground	8	Clear to Send
3	Transmit Data	6	Data Set Ready	9	Ring Indicator

VGA connector for an external monitor (J3)

Pin	Signal	Pin	Signal	Pin	Signal
1	Red	6	Ground	11	NC
2	Green	7	Ground	12	NC
3	Blue	8	Ground	13	Horizontal Sync
4	NC	9	NC	14	Vertical Sync
5	Ground	10	Ground	15	NC

Power converter board connector (22-pin male)

Pin No.	Signal Name	Description
1 to 4	GND	Ground
5	PSW	Indicates the power switch
6	GND	Ground
7	DOCKON	Indicates port replicator status
8	SUSHDD	HIGH (active) when system is entering suspend to hard disk mode
9	SUSCH	HIGH (active) when system is entering suspend to DRAM mode
10	DOCKSW	HIGH (active) when port replicator is installed
11	INVPWR	For the inverter power source
12 to 14	+5 V	For the system operating voltage
15	+3 V	For the system operating voltage
16	+12 V	For the flash ROM, etc.
17	+3 V	Same as pin 15
18	CHGLED	An output pin to drive the green LED
19	INVPWR	Same as pin 11
20 to 22	VA	A constant voltage form AC adapter

Power converter board connector (14-pin male)

Pin No.	Signal Name	Description
1 to 4	VA	Constant voltage from AC adapter
5	CHGLED	Output pin to drive the orange LED
6	SWITCH	To power on DC/DC converter
7	PWRON	Reserved
8	NC	No connection
9	NC	No connection
10	PWROFF	To power off DC/DC converter
11 to 14	GND	Ground

External keyboard/mouse connector (J7)

Pin	Signal	Pin	Signal	Pin	Signal
1	AUX-DATA	3	GND	5	AUX-CLK
2	NC	4	+5 V	6	NC

Microphone connector (J88)

Pin	Signal	Pin	Signal	Pin	Signal
1	AGND	3	BMIC	5	MICIN
2	MICIN	4	BMIC		

Fax/modem connector (J15)

Pin No.	Signal	Pin No.	Signal
1	$\overline{TRIS}$	12	GND
2	GND	13	$\overline{DSR2}$
3	$\overline{PTS2}$	14	VCC5
4	VCC5	15	$\overline{SPK}$
5	$\overline{DCD2}$	16	$\overline{MIC}$
6	SOUT2	17	$\overline{SPK}$
7	$\overline{DTR2}$	18	GND
8	SIN2	19	GND
9	$\overline{PI2}$	20	GND
10	GND	21	$\overline{LT}$
11	$\overline{CTS2}$	22	NC

Speaker connector (J18)

Pin	Signal	Pin	Signal
1	GND	2	SPK

FDD connector (J22)

Pin No.	Signal Name	Pin No.	Signal Name
1	VCC5	11	GND
2	INDEX	12	$\overline{WDATA}$
3	VCC5	13	GND
4	DR0	14	$\overline{WGATE}$
5	VCC5	15	GND
6	DSKCHG	16	TRK0
7	MEDIA0	17	GND
8	$\overline{MTRO}$	18	$\overline{WRTPRT}$
9	DIR	19	$\overline{RDATA}$
10	STEP	20	HDSEL

HDD IDE connector (J23)

Pin No.	Signal Name	Pin No.	Signal Name
1	RESET DRV	21	GND
2	GND	22	$\overline{IOWR}$
3	IDE D7	23	GND
4	GND	24	$\overline{IORD}$
5	SD8	25	GND
6	SD6	26	IOCHRDY
7	SD9	27	IRQ14
8	SD5	28	$\overline{IOCS16}$
9	SD10	29	SA1
10	SD4	30	GND
11	SD11	31	GND
12	SD3	32	SA0
13	SD12	33	SA2
14	SD2	34	$\overline{HCS0}$
15	SD13	35	$\overline{HCS1}$
16	SD1	36	HDDLED
17	SD14	37	VCC5
18	SD0	38	VCC5
19	SD15	39	GND
20	GND	40	VCC5

Memory module connector (J10)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	19	MA10	37	MD16	55	NC
2	MD0	20	NC	38	MD17	56	MD24
3	MD1	21	MD8	39	GND	57	MD25
4	MD2	22	MD9	40	$\overline{CAS0}$	58	MD26
5	MD3	23	MD10	41	$\overline{CAS2}$	59	MD28
6	MD4	24	MD11	42	$\overline{CAS3}$	60	MD27
7	MD5	25	MD12	43	$\overline{CAS1}$	61	VCC
8	MD6	26	MD13	44	$\overline{RAS0}$	62	MD29
9	MD7	27	MD14	45	$\overline{RAS1}$	63	MD30
10	VCC	28	MA7	46	MA12	64	MD31
11	PD1	29	MA11	47	$\overline{WE}$	65	NC
12	MA0	30	VCC	48	MA13	66	PD2
13	MA1	31	MA8	49	MD18	67	PD3
14	MA2	32	MA9	50	MD19	68	PD4
15	MA3	33	$\overline{RAS3}$	51	MD20	69	PD5
16	MA4	34	$\overline{RAS2}$	52	MD21	70	PD6
17	MA5	35	MD15	53	MD22	71	PD7
18	MA6	36	NC	54	MD23	72	GND

PCMCIA connector (P1 and P2)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	18	VPP1	35	GND	52	VPP2
2	D3	19	A16	36	CD1	53	A22
3	D4	20	A15	37	D11	54	A23
4	D5	21	A12	38	D12	55	A24
5	D6	22	A7	39	D13	56	A25
6	D7	23	A6	40	D14	57	RFU
7	$\overline{\text{CE1}}$	24	A5	41	D15	58	RESET
8	A10	25	A4	42	$\overline{\text{CE2}}$	59	$\overline{\text{WAIT}}$
9	$\overline{\text{OE}}$	26	A3	43	RFSH	60	$\overline{\text{INPACK}}$
10	A11	27	A2	44	$\overline{\text{IORD}}$	61	$\overline{\text{REG}}$
11	A9	28	A1	45	$\overline{\text{IOWR}}$	62	BVD2
12	A8	29	A0	46	A17	63	BVD1
13	A13	30	D0	47	A18	64	D8
14	A14	31	D1	48	A19	65	D9
15	$\overline{\text{WE}}$/PGM	32	D2	49	A20	66	D10
16	RDY/$\overline{\text{BSY}}$	33	WP	50	A21	67	CD2
17	VCCX	34	GND	51	VCCX	68	GND

LED card and audio card connector (J9)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	$\overline{\text{NUM}}$	16	SA0	31	$\overline{\text{IOWR}}$	46	LIN1I
2	PCMLED	17	SD2	32	SA8	47	12 V
3	$\overline{\text{SCR}}$	18	SA1	33	DRQ0	48	AGND
4	PRON/BL	19	SD3	34	SA9	49	IRQ5
5	$\overline{\text{CAPS}}$	20	SA2	35	$\overline{\text{DACK0}}$	50	LOUT0
6	PMU	21	SD4	36	DRQ3	51	IRQ7
7	HDDLED	22	SA3	37	DRQ1	52	LOUT1
8	CHAR ID	23	SD5	38	$\overline{\text{DACK3}}$	53	IRQ9
9	$\overline{\text{DR0}}$	24	SA4	39	$\overline{\text{DACK1}}$	54	AGND
10	VCC5	25	SD6	40	RESETDRV	55	IRQ10
11	$\overline{\text{CHAR ID}}$	26	SA5	41	14M	56	BMIC
12	BAT1	27	SD7	42	AGND	57	VCC5
13	SD0	28	SA6	43	GND	58	MICIN
14	488ENA	29	$\overline{\text{IORD}}$	44	LIN0I	59	GND
15	SD1	30	SA7	45	AEN	60	AGND

Audio-in connector (J4)

Pin	Signal	Pin	Signal	Pin	Signal
1	AGND	3	AGND	5	LIN0
2	LIN1	4	AGND		

Audio-Out connector (J24)

Pin	Signal	Pin	Signal	Pin	Signal
1	AGND	3	SPK	5	LOUT0
2	LOUT1	4	SPK		

LCD connector (J11, 10-pin)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	4	BPLD2	7	BPLD8	9	BPLD12
2	LCD ON	5	BPLD4	8	BPLD10	10	BPLD14
3	BPLD0	6	BPLD6				

LCD connector (J12, 15-pin)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	5	BPLD1	9	BPLD9	13	BSCP
2	BPLD7	6	BPLD15	10	BLP	14	FPVCC
3	BPLD5	7	BPLD13	11	BFM	15	GND
4	BPLD3	8	BPLD11	12	BFP		

LCD connector (J13, 12-pin)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	ADPR	4	BL ON	7	MANUSW	10	SW1
2	ADPR	5	LCD ON	8	COVERSW	11	SW2
3	LCD1	6	LCD2	9	VCC3	12	GND

Processor switch (S1)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	VBAT	2	P23	3	GND	4	3.6 V

Speed selection switch (S2)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	3	SPDSEL2	5	GND	7	SPDSEL0
2	GND	4	VCC3	6	VCC3	8	GND

CPU selection switch (S4)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	INTCY	2	$\overline{\text{STPGNT}}$	3	GND	4	GND

Main board connector to power converter (J16)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	DOCK PR	5	$\overline{\text{CHARID}}$	9	GND	13	GND
2	DOCK PR	6	SW2	10	PWOF	14	GND
3	DOCK PR	7	PWRON	11	GND		
4	DOCK PR	8	NC	12	GND		

Main board connector to power converter (J17)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	7	DOCK ON	13	VCC5	19	ADPR
2	GND	8	SUS HDD	14	VCC5	20	DOCK PR
3	GND	9	CLK OFF	15	VCC3	21	DOCK PR
4	GND	10	DOCKPLG	16	12 V	22	DOCK PR
5	SW ON	11	ADPTR	17	VCC3		
6	GND	12	VCC5	18	CHAR ID		

Touchpad connector (J19)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	TBDIS	5	MCLK	9	TBDIS	13	MCLK
2	Z8PO0	6	NC	10	Z8PO0	14	NC
3	Z8PO1	7	GND	11	Z8PO1	15	GND
4	VCC5	8	MDATA	12	VCC5	16	MDATA

Internal keyboard connector (J20)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	P37	4	P34	7	Z8PO1	10	P31
2	P36	5	P33	8	GND	11	P30
3	P35	6	Z8PO0	9	P32		

Internal keyboard connector (J21)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	P16	5	P12	9	P06	13	P02
2	P15	6	P11	10	P05	14	P01
3	P14	7	P10	11	P04	15	P00
4	P13	8	P07	12	P03		

Daughterboard connector (JP1)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	SPDSEL0	4	NC	7	SPDSEL2	10	TKA3B
2	DAC2	5	TURBO	8	MA10	11	RESVGA
3	NC	6	TKA3B	9	NC		

Daughterboard connector (JP2)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	MA2	6	MA7	10	DTYWE	14	KRMWEA
2	MA3	7	MA8	11	KTOE	15	KRMWEB
3	MA4	8	MA9	12	KRMOEA	16	CLKOFF
4	MA5	9	DIRTY	13	KRMOEB	17	TKA3A
5	MA6						

Port Replicator connector (J6)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
1	GND	26	DACK3	51	PD3	76	VCC5
2	PWR OFF	27	BUSY	52	GND	77	SA1
3	GND	28	GND	53	SD12	78	DRQ3
4	GND	29	SD6	54	IRQ5	79	EXKBCLK
5	SD0	30	BALE	55	PD4	80	VCC5
6	AEN	31	PE	56	DOCK ON	81	SA2
7	STROB	32	LOUT0	57	SD13	82	DACK0
8	MICIN	33	SD7	58	IRQ6	83	MCLK
9	SD1	34	ZWS	59	PD5	84	VCC5
10	RSRDRV	35	SLCT	60	EXTSPK	85	SA3
11	AUTOFD	36	GND	61	SD14	86	DACK5
12	GND	37	SD8	62	IRQ7	87	MDATA
13	SD2	38	IOCHCK	63	PD6	88	NC
14	REFRESH	39	PD0	64	NC	89	SA4
15	ERROR	40	LOUT1	65	SD15	90	DACK6
16	LIN0	41	SD9	66	GND	91	GND
17	SD3	42	IRQ9	67	PD7	92	VCC3
18	DACK1	43	PD1	68	NC	93	SA5
19	INIT	44	EXTPCM	69	GND	94	DACK7
20	GND	45	SD10	70	DRQ1	95	HSYNCOUT
21	SD4	46	IRQ3	71	GND	96	VCC3
22	DACK2	47	PD2	72	NONSUSP	97	SA6
23	ACK	48	GMCS	73	SA0	98	SBHE
24	LIN1	49	SD11	74	DRQ2	99	VSYNCOUT
25	SD5	50	IRQ4	75	EXKBDATA	100	NC

Port Replicator connector (J6) (continued)

Pin	Signal	Pin	Signal	Pin	Signal	Pin	Signal
101	SA7	126	DRQ0	151	DSKCHG	176	$\overline{XDTR1}$
102	$\overline{MEMR}$	127	$\overline{DTR2}$	152	12 V	177	$\overline{LT}$
103	BLU	128	$\overline{CTS2}$	153	SA20	178	$\overline{XRI1}$
104	NC	129	SA14	154	IRQ14	179	$\overline{TRK0}$
105	SA8	130	DRQ5	155	MEDIA1	180	NC
106	$\overline{MEMW}$	131	$\overline{DCD2}$	156	SA22	181	TPIS
107	GRN	132	SIN2	157	SA21	182	NC
108	NC	133	SA15	158	IRQ15	183	$\overline{WRTPRT}$
109	SA9	134	DRQ6	159	MTP1	184	DOCK PR
110	GND	135	$\overline{DSR2}$	160	IOCHRDY	185	SYSCLK
111	RED	136	HDDLED	161	$\overline{SLCTIN}$	186	DOCK PR
112	NC	137	SA16	162	GND	187	$\overline{RDATA}$
113	SA10	138	$\overline{RI2}$	163	DIR	188	DOCK PR
114	$\overline{MASTER}$	139	PWRCTRL	164	$\overline{XDCD1}$	189	OSC
115	GND	140	NC	165	SA23	190	DOCK PR
116	NC	141	SA17	166	$\overline{XDSR1}$	191	HDSEL
117	SA11	142	IRQ10	167	$\overline{STEP}$	192	DOCK PR
118	$\overline{MCS16}$	143	$\overline{INDEX}$	168	XSINI	193	TC
119	$\overline{RTS2}$	144	12 V	169	$\overline{IOPD}$	194	DOCK PR
120	NC	145	SA18	170	$\overline{XRTS1}$	195	GND
121	SA12	146	IRQ11	171	$\overline{WDATA}$	196	NC
122	$\overline{IOCS16}$	147	$\overline{DR1}$	172	XSOUT1	197	GND
123	SOUT2	148	12 V	173	$\overline{IOWR}$	198	NC
124	NC	149	SA19	174	$\overline{XCTS1}$	199	PWR OFF
125	SA13	150	IRQ12	175	$\overline{WGATE}$	200	GND

Hardware Interrupts

Interrupt	Function
IRQ0	Timer
IRQ1	Keyboard
IRQ2	Cascade
IRQ3	COM2 (2F8H) (COM4 02E8)
IRQ4	COM1 (3F8H) (COM3 03E8)
IRQ5	Optional sound card
IRQ6	Diskette Controller
IRQ7	LPT1
IRQ8	Clock/Calendar
IRQ9	Video
IRQ10	Available
IRQ11	Available
IRQ12	Touchpad
IRQ13	Reserved for Coprocessor
IRQ14	Hard Disk Drive Controller
IRQ15	Available

System Memory Map

Address	Area
000000H	640KB base memory
0A0000H	**128KB** reserved for graphics display area
0C0000H	Reserved
	Reserved
0E0000H	**40KB** for VGA BIOS
0EA000H	Power Management Utility
0F0000H	64KB for system BIOS
100000H	Extended memory
FFE000H	Duplicated code assignment at address 0E0000
FFFFFFH	

DMA Assignments

Channel	Device
DMA0	Available
DMA1	Optional Sound Card
DMA2	Diskette Controller
DMA3	**ECP**
DMA4	Cascade for CTRL 1
DMA5	Available
DMA6	Available
DMA7	Available

System I/O Address Map

Hexadecimal Address	Device
000-01F	DMA Controller 1
020-03F	Interrupt Controller
040-05F	Timer/Counter
060-06F	Keyboard Controller
070-07F	RTC NMI
080-09F	DMA Page Register
0A0-0BF	Interrupt Controller 2
0C0-0DF	DMA Controller 2
0F0	Clear Math Coprocessor Busy
0F1	Reset Math Coprocessor
0FB-0FF	Math Coprocessor
100-1EF	Available
1F0-1F8	Hard Disk Drive
200-207	Game Port
208-277	Optional Sound Card
278-27F	Parallel Port 2
2F8-2FF	Serial Port 2
300-31F	Prototype Card
360-36F	Reserved
378-37F	Parallel Port 1
380-38F	SDLC Bisynchronous 2
3A0-3AF	Bisynchronous 1
3B0-3BF	Mono Display Printer Adapter
3C0-3CF	Reserved
3D0-3DF	Color/Graphics Monitor Adapter
3E0-3EF	PCMCIA Controller
3F0-3F7	Diskette Drive Controller
3F8-3FF	Serial Port 1

Installation/Support Tips

Using Low Battery Save to HDD and Instant On

- The ActionNote 890 series hard disk drive is partitioned at the factory so that these options can be used. A 25MB area is set aside for the saved data; this ensures that there is enough space for all memory configurations.

- To prepare the hard disk drive, run the PHDISK utility, located in the C:\PM directory. You also need to run this utility if you upgrade your system memory. Type the following command at the DOS prompt and press Enter:

  PHDISK/CREATE

- If you install a new hard disk drive and want to use the Low Battery Save to HDD or Instant On options, you need to leave sufficient space on the disk unpartitioned. The amount of space should equal the system memory plus 2MB. After you run FDISK to partition the drive, you need to run the PHDISK utility to configure the storage space on the drive.

- In Windows 3.1, when the computer is turned on after using the Low Battery Save to HDD or Instant On options, the PCMCIA services are not reinitialized. The computer recognizes SRAM PC cards, but does not recognize most other PC cards. You must reboot to reinitialize the services.

Using an External Monitor

When you connect an external monitor, make sure you turn it on before you turn on the computer. The ActionNote automatically detects the external monitor and displays data on its screen. Press Fn F10 to switch your display from the monitor to the LCD screen or to display on both screens simultaneously.

Using a Serial Mouse

If you connect a serial mouse, you must use the Setup program to disable the built-in touchpad.

Information Reference List

Engineering Change Notices

None

Technical Information Bulletins

None

Product Support Bulletins

None

Related Documentation

400521800	EPSON ActionNote 890 Series User's Guide
400526800	About Your Software
400527000	Choosing Your Operating System
PL-AN890S	EPSON ActionNote 890 Series Parts Price List
TM-AN800T	EPSON ActionNote 890 Series Service Manual